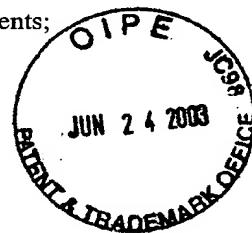




**Applicant:** Sorrells *et al.* **Due Date:**  
**Application No.:** 09/855,851 **Art Unit:** 2685  
**Filed:** May 16, 2001 **Examiner:** Urban, E.  
**For:** Apparatus, System, and Method for Down-Converting and Up-Converting Electromagnetic Signals **Docket:** 1744.1260001  
**Atty:** MQL/VLB

When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover Letter;
2. Supplemental Information Disclosure Statement;
3. Form PTO-1449 (5 pages) citing fifty-two (52) documents;
4. Copies of the fifty-two (52) cited documents; and
5. Returned postcard.



*Art Unit 2685*

**Please Date Stamp And Return To Our Courier**



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No. 09/855,851

Filed: May 16, 2001

For: **Apparatus, System, And Method for  
Down-Converting And Up-  
Converting Electromagnetic Signals**

Confirmation No. 9178

Art Unit: 2685

Examiner: Urban, Edward F.

Atty. Docket: 1744.1260001

**Supplemental Information Disclosure Statement**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Information Disclosure Statement filed on August 16, 2002 in connection with the above-captioned application.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may

not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Documents AL19, AM19 and AC50 were cited in an International Search Report in PCT Appl. No. PCT/US01/08969, filed March 22, 2001, entitled, "Integrated Frequency Translation and Selectivity with a Gain Control Functionality, and Applications Thereof," directed to related subject matter. Also cited in said Search Report were U.S. Patent Nos. 4,888,557 and 5,801,654 and PCT Publication Nos. WO 96/02977 and WO 96/39750, which were cited in Applicants' Information Disclosure Statement filed on August 16, 2002 in connection with the above-captioned application.

Document AD50 was cited by in an Office Action in co-pending U.S. Patent Application Serial No. 09/376,509, filed August 18, 1999, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter.

Documents AE50-AG50, AI50, AB51 and AE51 were cited in an Office Action in co-pending U.S. Patent Appl. No. 09/476,330, filed January 3, 2000, entitled, "Multi-Mode, Multi-Band Communication System," directed to related subject matter.

Document AH50 was cited in an Office Action in co-pending U.S. Patent Appl. No. 09/567,963, filed May 10, 2000, entitled, "Frequency Synthesizer Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AA51, AC51 and AD51 were cited in an Office Action in co-pending U.S. Patent Appl. No. 09/526,041, filed March 14, 2000, entitled, "DC Offset, Re-radiation, and I/Q Solutions Using Universal Frequency Translation Technology," directed to related subject matter.

Document AG51 was cited in an Office Action in co-pending U.S. Patent Application Serial No. 09/476,092, filed January 3, 2000, entitled "Analog Zero IF FM Decoder and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,600,680 and 5,606,731, which have already been cited in the present application in the Information Disclosure Statement of August 16, 2002.

Documents AH51, AI51 and AH52 are co-owned patents which are directed to related subject matter.

Documents AA52 and AN58-AP58 were cited in an Office Action in co-pending U.S. Patent Appl. No. 09/567,977, filed May 10, 2000, entitled, "Optical Down-converter Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AB52-AD52 were cited in an International Search Report in counterpart PCT Appl. No. PCT/US02/35861, filed November 8, 2002, entitled, "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AE52, AF52, AK22-AM22 and AQ58 were cited in an International Search Report in PCT Appl. No. PCT/US01/15555, filed May 16, 2001, entitled, "Apparatus, System, and Method for Down-Converting and Up-Converting Electromagnetic Signals," directed to related subject matter. Also cited in said Search Report were U.S. Patent Nos. 4,888,557, 5,454,007, 5,640,698 and 5,705,949, and PCT Publication No. WO 96/02977, which have already been cited in the present application in the Information Disclosure Statement of August 16, 2002.

Documents AG52 and AJ23 were cited in an Invitation to Pay Additional Fees in PCT Appl. No. PCT/US01/43077, filed November 14, 2001, entitled "Method and Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Document AJ20 was cited in an Official Notice of Rejection in co-pending Japanese Patent Application Serial No. 2000-577,764, filed June 21, 2000, entitled "Applications of Universal Frequency Translation," directed to related subject matter. Also cited in said Notice of Rejection was Japanese Patent Publication No. 58-133004, which has already been cited in the present application in the Information Disclosure Statement of August 16, 2002.

Documents AK20, AL20, AJ21, AK21, AL21, AP56 and AQ56 were cited in an International Search Report in counterpart PCT Appl. No. PCT/US01/12086, filed April 13, 2001, entitled, "Frequency Converter," directed to related subject matter. Also cited in said Search Report was U.S. Patent No. 5,844,449, which has already been cited in the present application in the Information Disclosure Statement of August 16, 2002.

Documents AM21 and AJ22 were cited in an Official Notice of Rejection in co-pending Japanese Patent Application No. 2000-577,765, filed June 21, 2000, entitled "Method and System for Ensuring Reception of a Communications Signal," directed to related subject matter. Also cited in said Notice of Rejection were Japanese Patent Publication Nos. 56-114451, 8-139524 and 8-32556, which have already been cited in the present application in the Information Disclosure Statement of August 16, 2002.

The other documents in the PTO-1449 do not fall within the above categories.

It is noted that some of these documents could be classified in more than one of the above categories.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
  - a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
  - b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in

a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

- c. Attached is our PTO-2038 Credit Card Payment Form in the amount of \_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p).
- 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our Check No. \_\_\_\_\_ in the amount of \$ \_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
  - a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
  - b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.

☒ 6. Concise explanations of the relevance of the non-English language documents AJ20-AL20, AK21, AM21 and AJ22 appear below:

Document AJ20 (JP 60-130203) appears to describe a frequency converter. A copy of the English language abstract of document AJ20 is enclosed as document AO56 on the attached PTO-1449.

Document AK20 (DE 196 27 640 A1) appears to describe a mixer. Document AK20 is a counterpart German application of U.S. Patent No. 5,680,078, which has already been cited in the present application in the Information Disclosure Statement of August 16, 2002.

Document AL20 (EP 0 087 336 A1) appears to describe a transistorized mixer for microwave transmitters. The granted version of document AL20 is cited as document AM20 (EP 0 087 336 B1) and contains an English-language version of the claims.

Document AK21 (FR 2 669 787 A1) appears to describe a symmetrical super high frequency mixer. A copy of the English-language abstract of document AK21 is enclosed as document AR56 on the attached PTO-1449.

Document AM21 (JP 61-30821) appears to describe a squelch device. A copy of the English-language abstract of document AM21 is enclosed as document AP57 on the attached PTO-1449.

Document AJ22 (JP 5-327356) appears to describe a frequency converter. A copy of the English-language abstract of document AJ22 is enclosed as document AQ57 on the attached PTO-1449.

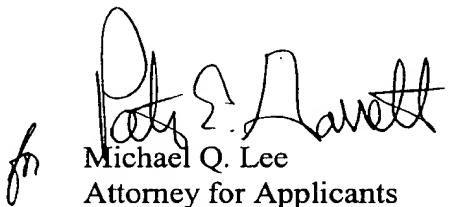
☒ 7. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. \_\_\_\_\_, filed \_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

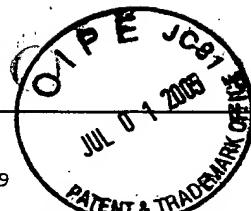
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

  
Michael Q. Lee  
Attorney for Applicants  
Registration No. 35,239  
39,987

Date: 6/24/03

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FORM PTO-1449

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.  
1744.1260001APPLICATION NO.  
09/855,851APPLICANT  
Sorrells et al.FILING DATE  
May 16, 2001GROUP  
2685**U.S. PATENT DOCUMENTS**

| EXAMINER INITIAL |      | DOCUMENT NUMBER | DATE    | NAME           | CLASS | SUB-CLASS | FILING DATE |
|------------------|------|-----------------|---------|----------------|-------|-----------|-------------|
|                  | AA   |                 |         |                |       |           |             |
|                  | AB   |                 |         |                |       |           |             |
|                  | AC50 | 5,633,815       | 05/1997 | Young          |       |           |             |
|                  | AD50 | 3,246,084       | 04/1966 | Kryter         |       |           |             |
|                  | AE50 | 3,702,440       | 11/1972 | Moore          |       |           |             |
|                  | AF50 | 3,767,984       | 10/1973 | Shinoda et al. |       |           |             |
|                  | AG50 | 3,852,530       | 12/1974 | Shen           |       |           |             |
|                  | AH50 | 4,220,977       | 09/1980 | Yamanaka       |       |           |             |
|                  | AI50 | 5,016,242       | 05/1991 | Tang           |       |           |             |

**FOREIGN PATENT DOCUMENTS**

| EXAMINER INITIAL |      | DOCUMENT NUMBER | DATE    | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|------|-----------------|---------|---------|-------|-----------|-------------|
|                  | AJ   |                 |         |         |       |           |             |
|                  | AK   |                 |         |         |       |           |             |
|                  | AL19 | EP 0 254 844 A2 | 02/1988 | EP      | H03D  | 7/00      | N/A         |
|                  | AM19 | EP 0 632 577 A1 | 01/1995 | EP      | H03D  | 7/16      | N/A         |

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

|  |    |    |  |
|--|----|----|--|
|  | AN |    |  |
|  | AO | 56 | Translation of Japanese Patent Publication No. 60-130203, 3 pages (July 11, 1985- Date of publication of application).   |
|  | AP | 56 | Razavi, B., "A 900-MHz/1.8-Ghz CMOS Transmitter for Dual-Band Applications," <i>Symposium on VLSI Circuits Digest of Technical Papers</i> , IEEE, pp. 128-131 (1998).    |
|  | AQ | 56 | Ritter, G.M., "SDA, A New Solution for Transceivers," <i>16th European Microwave Conference</i> , Microwave Exhibitions and Publishers, pp. 729-733 (September 8, 1986). |
|  | AR | 56 | DIALOG File 351 (Derwent WPI) English Language Patent Abstract for FR 2 669 787, 1 page (May 29, 1992- Date of publication of application).                              |

| EXAMINER | DATE CONSIDERED |
|----------|-----------------|
|          |                 |

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

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## U.S. PATENT DOCUMENTS

| EXAMINER INITIAL |      | DOCUMENT NUMBER | DATE    | NAME            | CLASS | SUB-CLASS | FILING DATE |
|------------------|------|-----------------|---------|-----------------|-------|-----------|-------------|
|                  | AA51 | 5,937,013       | 08/1999 | Lam et al.      |       |           |             |
|                  | AB51 | 6,014,551       | 01/2000 | Pesola et al.   |       |           |             |
|                  | AC51 | 6,073,001       | 06/2000 | Sokoler         |       |           |             |
|                  | AD51 | 6,085,073       | 07/2000 | Palermo et al.  |       |           |             |
|                  | AE51 | 6,400,963 B1    | 06/2002 | Glöckler et al. |       |           | 05/21/1999  |
|                  | AF51 | 6,230,000 B1    | 05/2001 | Tayloe          |       |           | 10/15/1998  |
|                  | AG51 | 5,483,695       | 01/1996 | Pardoen         |       |           |             |
|                  | AH51 | 6,542,722 B1    | 04/2003 | Sorrells et al. |       |           | 04/16/1999  |
|                  | AI51 | 6,560,301 B1    | 05/2003 | Cook et al.     |       |           | 04/16/1999  |

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| EXAMINER INITIAL |      | DOCUMENT NUMBER  | DATE    | COUNTRY | CLASS | SUB-CLASS | TRANSLATION        |
|------------------|------|------------------|---------|---------|-------|-----------|--------------------|
|                  | AJ20 | JP 60-130203     | 07/1985 | JP      | H03D  | 7/00      | Yes<br>(Doc. AO56) |
|                  | AK20 | DE 196 27 640 A1 | 01/1997 | DE      | H03D  | 7/12      | No                 |
|                  | AL20 | EP 0 087 336 A1  | 08/1983 | EP      | H03D  | 7/12      | No                 |
|                  | AM20 | EP 0 087 336 B1  | 07/1986 | EP      | H03D  | 7/12      | No                 |

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

|  |    |    |   |
|--|----|----|---|
|  | AN | 57 | Akos, D.M. et al., "Direct Bandpass Sampling of Multiple Distinct RF Signals," <i>IEEE Transactions on Communications</i> , IEEE, Vol. 47, No. 7, pp. 983-988 (July 1999).              |
|  | AO | 57 | Patel, M. et al., "Bandpass Sampling for Software Radio Receivers, and the Effect of Oversampling on Aperture Jitter," <i>VTC 2002</i> , IEEE, pp. 1901-1905 (2002).                    |
|  | AP | 57 | English-language Abstract of Japanese Patent Publication No. 61-030821, 1 Page (February 13, 1986- Date of publication of application).   |
|  | AQ | 57 | English-language Abstract of Japanese Patent Publication No. 05-327356, 1 Page (December 10, 1993 - Date of publication of application).  |
|  | AR | 57 | Tayloe, D., "A Low-noise, High-performance Zero IF Quadrature Detector/Preamplifier," <i>RF Design</i> , Primedia Business Magazines & Media, Inc., pp. 58, 60, 62 and 69 (March 2003). |

EXAMINER

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|------------------|------|-----------------|---------|-----------------|-------|-----------|-------------|
|                  | AA52 | 6,098,046       | 08/2000 | Cooper et al.   |       |           |             |
|                  | AB52 | 5,410,326       | 04/1995 | Goldstein       |       |           |             |
|                  | AC52 | 5,956,025       | 09/1999 | Goulden et al.  |       |           |             |
|                  | AD52 | 6,127,941       | 10/2000 | Van Ryzin       |       |           |             |
|                  | AE52 | 5,564,097       | 10/1996 | Swanke          |       |           |             |
|                  | AF52 | 5,898,912       | 04/1999 | Heck et al.     |       |           |             |
|                  | AG52 | 4,660,164       | 04/1987 | Leibowitz       |       |           |             |
|                  | AH52 | 6,580,902 B1    | 06/2003 | Sorrells et al. |       |           | 04/16/1999  |
|                  | AI   |                 |         |                 |       |           |             |

**FOREIGN PATENT DOCUMENTS**

| EXAMINER INITIAL |      | DOCUMENT NUMBER    | DATE    | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|------|--------------------|---------|---------|-------|-----------|-------------|
|                  | AJ21 | EP 0 789 449 A2&A3 | 08/1997 | EP      | H03D  | 7/12      | N/A         |
|                  | AK21 | FR 2 669 787 A1    | 05/1992 | FR      | H03D  | 7/14      | No          |
|                  | AL21 | GB 2 324 919 A     | 11/1998 | GB      | H03D  | 7/18      | N/A         |
|                  | AM21 | JP 61-30821        | 02/1986 | JP      | H04B  | 1/10      | No          |

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

|  |    |           |  |
|--|----|-----------|--|
|  | AN | <u>58</u> | Dines, J.A.B., "Smart Pixel Optoelectronic Receiver Based on a Charge Sensitive Amplifier Design," <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , IEEE, Vol. 2, No. 1, pp. 117-120 (April 1996).      |
|  | AO | <u>58</u> | Simoni, A. et al., "A Digital Camera for Machine Vision," <i>20th International Conference on Industrial Electronics, Control and Instrumentation</i> , IEEE, pp. 879-883 (September 1994).                            |
|  | AP | <u>58</u> | Stewart, R.W. and Pfann, E., "Oversampling and sigma-delta strategies for data conversion," <i>Electronics &amp; Communication Engineering Journal</i> , IEEE, pp. 37-47 (February 1998).                              |
|  | AQ | <u>58</u> | Rudell, J.C. et al., "A 1.9-Ghz Wide-Band IF Double Conversion CMOS Receiver for Cordless Telephone Applications," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. 32, No. 12, pp. 2071-2088 (December 1997). |
|  | AR |           |  |

EXAMINER

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| FORM PTO-1449<br><u>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT</u> |  |  | ATTY. DOCKET NO.<br>1744.1260001 | APPLICATION NO.<br>09/855,851 |
|   |  |  | APPLICANT<br>Sorrells et al.     |                               |
|   |  |  | FILING DATE<br>May 16, 2001      | GROUP<br>2685                 |

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|                  | AC |                 |      |      |       |           |             |
|                  | AD |                 |      |      |       |           |             |
|                  | AE |                 |      |      |       |           |             |
|                  | AF |                 |      |      |       |           |             |
|                  | AG |                 |      |      |       |           |             |
|                  | AH |                 |      |      |       |           |             |
|                  | AI |                 |      |      |       |           |             |

## FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL |      | DOCUMENT NUMBER      | DATE    | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|------|----------------------|---------|---------|-------|-----------|-------------|
|                  | AJ22 | JP 5-327356          | 12/1993 | JP      | H03D  | 7/00      | No          |
|                  | AK22 | EP 0 643 477 A2 & A3 | 03/1995 | EP      | H03D  | 7/16      | N/A         |
|                  | AL22 | EP 0 877 476 A1      | 11/1998 | EP      | H03D  | 7/16      | N/A         |
|                  | AM22 | EP 0 977 351 A1      | 02/2000 | EP      | H03D  | 7/16      | N/A         |

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

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|                  | AB |                 |      |      |       |           |             |
|                  | AC |                 |      |      |       |           |             |
|                  | AD |                 |      |      |       |           |             |
|                  | AE |                 |      |      |       |           |             |
|                  | AF |                 |      |      |       |           |             |
|                  | AG |                 |      |      |       |           |             |
|                  | AH |                 |      |      |       |           |             |
|                  | AI |                 |      |      |       |           |             |

**FOREIGN PATENT DOCUMENTS**

| EXAMINER INITIAL |      | DOCUMENT NUMBER | DATE    | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|------|-----------------|---------|---------|-------|-----------|-------------|
|                  | AJ23 | WO 00/31659 A1  | 06/2000 | PCT     |       |           |             |
|                  | AK   |                 |         |         |       |           |             |
|                  | AL   |                 |         |         |       |           |             |
|                  | AM   |                 |         |         |       |           |             |

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

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|  | AN |  |  |
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|  | AR |  |  |

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**Applicants:** SORRELLS *et al.*

**Application No.:** 09/855,851

**Filed:** May 16, 2001

**For:** Apparatus, System, And  
Method For Down-Converting  
And Up-Converting  
Electromagnetic Signals

**Due Date:** NONE

**Art Unit:** 2685

**Confirmation No.:** 9178

**Examiner:** Le, Lana N.

**Docket:** 1744.1260001

**Atty:** PEG/NDD

When receipt stamp is placed hereon, the USPTO acknowledges receipt of the following documents:

1. SKGF Cover Letter;
2. Second Supplemental Information Disclosure Statement;
3. Form PTO-1449 listing 115 documents;
4. Photocopies of Document Nos. AK23, AL23, AR58, AN59, AO59, and AP59;
5. CD-ROM Reference Disc 3; and
6. One return postcard.



**Please Date Stamp and Return to Our Courier**

|  |  |                                     |  |                               |  |
|--|--|-------------------------------------|--|-------------------------------|--|
| FORM PTO-1449<br>SECOND SUPPLEMENTAL<br>INFORMATION DISCLOSURE STATEMENT |  | ATTY. DOCKET NO.<br>1744.1260001    |  | APPLICATION NO.<br>09/855,851 |  |
|  |  | INVENTORS<br>SORRELLS <i>et al.</i> |  |                               |  |
|  |  | FILING DATE<br>May 16, 2001         |  | ART UNIT<br>2685              |  |
|  |  | <b>U.S. PATENT DOCUMENTS</b>        |  |                               |  |

| EXAMINER INITIAL |      | DOCUMENT NUMBER | DATE    | NAME                   | CLASS | SUB-CLASS | FILING DATE |
|------------------|------|-----------------|---------|------------------------|-------|-----------|-------------|
|                  | AA54 | 4,016,366       | 04/1977 | Kurata                 |       |           |             |
|                  | AB54 | 4,045,740       | 08/1977 | Baker                  |       |           |             |
|                  | AC54 | 4,115,737       | 09/1978 | Hongu <i>et al.</i>    |       |           |             |
|                  | AD54 | 5,710,992       | 01/1998 | Sawada <i>et al.</i>   |       |           |             |
|                  | AE54 | 5,790,587       | 08/1998 | Smith <i>et al.</i>    |       |           |             |
|                  | AF54 | 4,740,675       | 04/1988 | Brosnan <i>et al.</i>  |       |           |             |
|                  | AG54 | 5,483,600       | 01/1996 | Werrbach               |       |           |             |
|                  | AH54 | 6,011,435       | 01/2000 | Takeyabu <i>et al.</i> |       |           |             |
|                  | AI54 | 6,321,073 B1    | 11/2001 | Luz <i>et al.</i>      |       |           |             |

**FOREIGN PATENT DOCUMENTS**

| EXAMINER INITIAL |    | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|----|-----------------|------|---------|-------|-----------|-------------|
|                  | AJ |                 |      |         |       |           | Yes<br>No   |
|                  | AK |                 |      |         |       |           | Yes<br>No   |
|                  | AL |                 |      |         |       |           | Yes<br>No   |
|                  | AM |                 |      |         |       |           | Yes<br>No   |

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

|  |    |  |  |
|--|----|--|--|
|  | AN |  |  |
|  | AO |  |  |
|  | AP |  |  |
|  | AQ |  |  |
|  | AR |  |  |

| EXAMINER  | DATE CONSIDERED |
|---|-----------------|
| <b>EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant. |                 |



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|   |   |
|---|---|
| In re application of:<br><br>SORRELLS <i>et al.</i><br><br>Appl. No.: 09/855,851<br><br>Filed: May 16, 2001<br><br>For: <b>Apparatus, System, and Method for<br/>Down-Converting and Up-<br/>Converting Electromagnetic Signals</b> | Confirmation No.: 9178<br><br>Art Unit: 2685<br><br>Examiner: Le, Lana N.<br><br>Atty. Docket: 1744.1260001 |
|---|---|

**Fourth Supplemental Information Disclosure Statement**

***Mail Stop Amendment***

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Fourth Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Third Supplemental Information Disclosure Statement filed on March 10, 2005 in connection with the above-captioned application.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may

not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Document AQ59 was cited in a Notice of Allowance in related U.S. Patent Application No. 10/290,323, filed November 8, 2002, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter.

Documents AE66 and AF66 are co-owned patents which are directed to related subject matter.

Document AG66 was cited in an Office Action in related U.S. Patent Application No. 09/550,642, filed April 14, 2000, entitled "Method And System For Down-Converting An Electromagnetic Signal, And Transforms For Same," directed to related subject matter. Also cited in said Office Action were U.S. Pat. Nos. 5,678,226 and 6,094,084, which have already been cited in the present application.

Document AH66 was cited in an Office Action in related U.S. Patent Application No. 09/476,092, filed January 3, 2000, entitled "Analog Zero If Fm Decoder And Embodiments Thereof, Such As The Family Radio Service," directed to related subject matter. Also cited in said Office Action were U.S. Pat. Nos. 5,600,680 and 5,606,731, which have already been cited in the present application.

Documents AI66 and AA67-AC67 were cited in an Office Action in related U.S. Patent Application No. 09/567,977, filed May 10, 2000, entitled "Optical Down-Converter Using Universal Frequency Translation Technology," directed to related

subject matter. Also cited in said Office Action was Stewart, R.W. and Pfann, E., "Oversampling and sigma-delta strategies for data conversion," *Electronics & Communication Engineering Journal*, IEEE, pp. 37-47 (February 1998),, which has already been cited in the present application.

Documents AD67 and AE67 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/632,855, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments," directed to related subject matter.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final

Atty. Docket: 1744.1260001

Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.

- a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- c. Attached is our PTO-2038 Credit Card Payment Form in the amount of \$180.00 in payment of the fee under 37 C.F.R. § 1.17(p).

4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$\_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

- a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- 6. A concise explanation of the relevance of the non-English language document(s) appears below in accordance with 37 C.F.R. § 1.98(a)(3).
- 7. A copy of document AQ59 is enclosed. However, in accordance with 37 C.F.R. § 1.98(a)(2), copies of the U.S. patents and patent application publications cited on the attached Form PTO-1449 are not enclosed.

8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. \_\_\_\_\_, filed \_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

9. It is expected that the examiner will review the prosecution and cited art in the parent application no(s). \_\_\_\_\_ in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application. It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

  
Patrick E. Garrett  
Attorney for Applicants  
Registration No. 39,987

Date: 7/1/05

1100 New York Avenue, N.W.  
Washington, D.C. 20005-3934  
(202) 371-2600

415637\_1.DOC



| FORM 1470-14 TRADEMARKS<br><b>FOURTH SUPPLEMENTAL<br/>INFORMATION DISCLOSURE STATEMENT</b>  |           | ATTY. DOCKET NO.<br>1744.1260001  |         | APPLICATION NO.<br>09/855,851 |       |           |             |
|---|-----------|---|---------|-------------------------------|-------|-----------|-------------|
|   |           | FIRST NAMED INVENTOR<br>David F. SORRELLS   |         |                               |       |           |             |
|   |           | FILING DATE<br>May 16, 2001   |         | ART UNIT<br>2685              |       |           |             |
|   |           | <b>U.S. PATENT DOCUMENTS</b>  |         |                               |       |           |             |
| EXAMINER INITIAL  | DOC. REF. | DOCUMENT NUMBER   | DATE    | NAME                          | CLASS | SUB-CLASS | FILING DATE |
|   | AA        |   |         |                               |       |           |             |
|   | AB        |   |         |                               |       |           |             |
|   | AC        |   |         |                               |       |           |             |
|   | AD        |   |         |                               |       |           |             |
|   | AE66      | 6,873,836 B1  | 03/2005 | Sorrells <i>et al.</i>        |       |           |             |
|   | AF66      | 6,879,817 B1  | 04/2005 | Sorrells <i>et al.</i>        |       |           |             |
|   | AG66      | 6,057,714   | 05/2000 | Andrys <i>et al.</i>          |       |           |             |
|   | AH66      | 2003/0081781 A1   | 05/2003 | Jensen <i>et al.</i>          |       |           |             |
|   | AI66      | 5,994,689   | 11/1999 | Charrier                      |       |           |             |
| <b>FOREIGN PATENT DOCUMENTS</b>   |           |   |         |                               |       |           |             |
| EXAMINER INITIAL  | DOC. REF. | DOCUMENT NUMBER   | DATE    | COUNTRY                       | CLASS | SUB-CLASS | TRANSLATION |
|   | AJ        |   |         |                               |       |           | Yes<br>No   |
|   | AK        |   |         |                               |       |           | Yes<br>No   |
|   | AL        |   |         |                               |       |           | Yes<br>No   |
|   | AM        |   |         |                               |       |           | Yes<br>No   |
| <b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)</b>   |           |   |         |                               |       |           |             |
| EXAMINER INITIAL  | DOC. REF. | CITATION  |         |                               |       |           |             |
|   | AN        |   |         |                               |       |           |             |
|   | AO        |   |         |                               |       |           |             |
|   | AP        |   |         |                               |       |           |             |
|   | AQ59      | Hellwarth, G.A. and Jones, G.D., "Automatic Conditioning of Speech Signals," <i>IEEE Transactions on Audio and Electroacoustics</i> , Vol. AU-16, No. 2, pp. 169-179 (June 1968). |         |                               |       |           |             |
|   | AR        |   |         |                               |       |           |             |
| EXAMINER  |           |   |         | DATE CONSIDERED               |       |           |             |
| <b>EXAMINER:</b> Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant. |           |   |         |                               |       |           |             |



|   |  |   |  |                               |  |
|---|--|---|--|-------------------------------|--|
| FORM PTO-1449   |  | ATTY. DOCKET NO.<br>1744.1260001          |  | APPLICATION NO.<br>09/855,851 |  |
| FOURTH SUPPLEMENTAL<br>INFORMATION DISCLOSURE STATEMENT |  | FIRST NAMED INVENTOR<br>David F. SORRELLS |  |                               |  |
|   |  | FILING DATE<br>May 16, 2001               |  | ART UNIT<br>2685              |  |

#### U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOC. REF. | DOCUMENT NUMBER | DATE    | NAME                     | CLASS | SUB-CLASS | FILING DATE |
|------------------|-----------|-----------------|---------|--------------------------|-------|-----------|-------------|
|                  | AA67      | 6,512,544 B1    | 01/2003 | Merrill <i>et al.</i>    |       |           |             |
|                  | AB67      | 6,628,328 B1    | 09/2003 | Yokouchi <i>et al.</i>   |       |           |             |
|                  | AC67      | 6,801,253 B1    | 10/2004 | Yonemoto <i>et al.</i>   |       |           |             |
|                  | AD67      | 3,737,778       | 06/1973 | Van Gerwen <i>et al.</i> |       |           |             |
|                  | AE67      | 4,286,283       | 08/1981 | Clemens                  |       |           |             |
|                  | AF        |                 |         |                          |       |           |             |
|                  | AG        |                 |         |                          |       |           |             |
|                  | AH        |                 |         |                          |       |           |             |
|                  | AI        |                 |         |                          |       |           |             |

#### FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | DOC. REF. | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB-CLASS | TRANSLATION |
|------------------|-----------|-----------------|------|---------|-------|-----------|-------------|
|                  | AJ        |                 |      |         |       |           | Yes<br>No   |
|                  | AK        |                 |      |         |       |           | Yes<br>No   |
|                  | AL        |                 |      |         |       |           | Yes<br>No   |
|                  | AM        |                 |      |         |       |           | Yes<br>No   |

#### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

| EXAMINER INITIAL | DOC. REF. | CITATION |
|------------------|-----------|----------|
|                  | AN        |          |
|                  | AO        |          |
|                  | AP        |          |
|                  | AQ        |          |
|                  | AR        |          |

EXAMINER

DATE CONSIDERED

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.